

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

Claims 1-56 (canceled) ✓

Claim 57 (previously added): An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a platform on which a multiwell plate is positionable;

a mother liquor drop station capable of removing mother liquor from a plurality of wells of the multiwell plate and delivering submicroliter volumes of mother liquor to drop regions on the multiwell plate within a volume range of less than about 25 nL; and

a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the drop regions within a volume range of less than about 25 nL.

C
Claim 58 (currently amended): The apparatus according to claim ~~29~~ 57 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 20 nL.

Claim 59 (currently amended): The apparatus according to claim ~~29~~ 57 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 15 nL.

Claim 60 (currently amended): The apparatus according to claim ~~29~~ 57 wherein the mother liquor drop station and the molecule drop station each include a piezoelectric valve or a solenoid valve.

Claim 61 (previously added): An apparatus for forming submicroliter hanging drops on cover slips used in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

- a platform on which a multiwell plate is positionable;
- a cover slip station on which a plurality of coverslips are positionable;
- a mother liquor drop station capable of removing mother liquor from a plurality of wells of the multiwell plate and delivering submicroliter volumes of mother liquor to the plurality of coverslips within a volume range of less than about 25 nL; and
- a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the plurality of coverslips within a volume range of less than about 25 nL.

C
Claim ~~62~~ (currently amended): The apparatus according to claim ~~33~~ 61 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 20 nL.

Claim 63 (currently amended): The apparatus according to claim ~~33~~ 61 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 15 nL.

Claim 64 (currently amended): The apparatus according to claim ~~33~~ 61 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes to at least four coverslips at a time.

Claim 65 (currently amended): The apparatus according to claim ~~33~~ 61 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes to at least eight coverslips at a time.

Claim 66 (previously added): An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a platform on which a multiwell plate is positionable;

a mother liquor drop station capable of removing mother liquor from a plurality of wells of the multiwell plate and delivering submicroliter volumes of mother liquor to sitting drop regions on the multiwell plate within a volume range of less than about 25 nL; and

a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the sitting drop regions within a volume range of less than about 25 nL.

Claim 67 (currently amended): The apparatus according to claim ~~38~~ 66 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 20 nL.

Claim 68 (currently amended): The apparatus according to claim ~~38~~ 66 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 15 nL.

Claim 69 (currently amended): The apparatus according to claim ~~38~~ 66 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 10 nL.

Claim 70 (previously added): An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a mother liquor drop station capable of removing mother liquor from a plurality of wells of a multiwell plate and delivering submicroliter volumes of mother liquor to drop regions on the multiwell plate within a volume range of less than about 25 nL; and

a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the drop regions within a volume range of less than about 25 nL.

Claim 71 (previously added): An apparatus for forming submicroliter hanging drops on cover slips used in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a cover slip station on which a plurality of coverslips are positionable;

a mother liquor drop station capable of removing mother liquor from a plurality of wells of a multiwell plate and delivering submicroliter volumes of mother liquor to the plurality of coverslips within a volume range of less than about 25 nL; and

a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the plurality of coverslips within a volume range of less than about 25 nL.

Claim 72 (previously added): An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a mother liquor drop station capable of removing mother liquor from a plurality of wells of a multiwell plate and delivering submicroliter volumes of mother liquor to sitting drop regions on the multiwell plate within a volume range of less than about 25 nL; and

a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the sitting drop regions within a volume range of less than about 25 nL.

Claim 73 (previously added): An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a mother liquor drop station capable of removing mother liquor from a plurality of wells of a multiwell plate at a time and delivering submicroliter volumes of the removed mother liquor at the same time to drop regions on the multiwell plate; and

a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the drop regions.

Claim 74 (previously added): An apparatus according to claim 73 wherein the apparatus is capable of removing mother liquor from at least 4 different wells of the multiwell plate at a time.

Claim 75 (previously added): An apparatus according to claim 73 wherein the apparatus is capable of removing mother liquor from at least 8 different wells of the multiwell plate at a time.

Claim 76 (previously added): An apparatus according to claim 73 wherein the apparatus is capable of delivering submicroliter volumes of the solution containing the molecule to be crystallized within a volume range of less than about 25 nL.

Claim 77 (previously added): An apparatus for forming submicroliter hanging drops on cover slips used in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a cover slip station on which a plurality of coverslips are positionable;

a mother liquor drop station capable of removing mother liquor from a plurality of wells of a multiwell plate at a time and delivering submicroliter volumes of the removed mother liquor at the same time to drop regions on the multiwell plate; and
a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the plurality of coverslips.

Claim 78 (previously added): An apparatus according to claim 77 wherein the apparatus is capable of removing mother liquor from at least 4 different wells of the multiwell plate at a time.

Claim 79 (previously added): An apparatus according to claim 77 wherein the apparatus is capable of removing mother liquor from at least 8 different wells of the multiwell plate at a time.

Claim 80 (previously added): An apparatus according to claim 77 wherein the apparatus is capable of delivering submicroliter volumes of the solution containing the molecule to be crystallized within a volume range of less than about 25 nL.

C
Claim 81 (previously added): An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:

a mother liquor drop station capable of removing mother liquor from a plurality of wells of a multiwell plate at a time and delivering submicroliter volumes of the removed mother liquor at the same time to drop regions on the multiwell plate; and
a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the sitting drop regions.

Claim 82 (previously added): An apparatus according to claim 81 wherein the apparatus is capable of removing mother liquor from at least 4 different wells of the multiwell plate at a time.

Claim 83 (previously added): An apparatus according to claim 81 wherein the apparatus is capable of removing mother liquor from at least 8 different wells of the multiwell plate at a time.

Claim 84 (previously added): An apparatus according to claim 81 wherein the apparatus is capable of delivering submicroliter volumes of the solution containing the molecule to be crystallized within a volume range of less than about 25 nL.
